

Shattering the Pull-up Myth

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"Every Marine must be physically fit, regardless of age, grade, or duty assignment. Fitness is essential to the day-to-day effectiveness and combat readiness of the Marine Corps."

- "Marine Corps Physical Fitness Test and Body Composition Program Manual," 2002, p. 1-1

"Pull-ups are a great exercise and should be a staple for anyone who wants to improve strength."

- Dr. George C. Colfer, "Fit to Fight," 2004, p. 2  
Ph.D. in Kinesiology and Health

"Females are perfectly capable of performing strenuous activity, and there is basically no difference between the genders regarding strength, skill and endurance in proportion to total body weight, lean body weight, and the same exposure to learning and practice."

- Dr. George C. Colfer, "Fit to Fight," 2004, p. 2  
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The Marine Corps is a fighting organization whose purpose is combat readiness, and an essential aspect of combat readiness is physical conditioning. According to the Marine Corps' manual for physical fitness, physical conditioning should include strength training, which is defined as "the ability of the muscular system to move the body through resistance... and the ability of Marines to effectively handle their own body weight."<sup>1</sup> However, despite the requirement for strength training for all Marines, upper body development for female Marines is largely ignored. The Marine Corps' Physical Fitness Test (PFT) requires female Marines to perform a flexed arm hang, which does not demonstrate the ability to move the body through resistance. Women Marines should be required to perform pull-ups on the PFT in order to more accurately evaluate upper body strength, properly condition them for the possibility of combat, and to eliminate differing requirements that can negatively impact unit cohesion.

### **Changing Roles Require New Standards**

As women's roles have evolved in the Marine Corps, so have physical fitness standards and training requirements.

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<sup>1</sup> U.S. Marine Corps, *Marine Corps Physical Fitness Test and Body Composition Program Manual (MCPFTBCP)*, (Washington D.C.: Headquarters Marine Corps, 2002), 1-3.

When women first began serving in 1918, "woman-power" was used to meet the Corps' unprecedented demands for personnel during the war, and the official recruiting slogan became "Free a Marine to Fight".<sup>2</sup> Women mostly performed clerical duties during both world wars, thus freeing men in those billets for combat duty. Because woman's early role in the Marine Corps was limited to the areas of administration and supply, recruit training for women in 1949 resembled more of a charm school than boot camp.

Since the mission of boot camp was to "produce a basic woman Marine who [was] able to function effectively in garrison",<sup>3</sup> there was no need for rigorous physical training or qualification with a rifle. Thus, there was time during recruit training for courses like "Image Development" that taught women about "... the proper application and reapplication of cosmetics throughout the day."<sup>4</sup> Additionally, the final training event of boot camp was not physical or strategic, but social. Selected individuals from the depot were invited to participate in a social event where recruits were judged on poise, courtesy and

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<sup>2</sup> U.S. Marine Corps, *Women Marines in the 1980's* (Washington D.C.: Division of Public Affairs, Headquarters, U.S. Marine Corps, 1986), 9.

<sup>3</sup> Mary A. Stemlow, *A History of the Women Marines 1946-1977*. (Washington D.C.: History and Museums Division, Headquarters, U.S. Marine Corps, 1986), 57 and 109.

<sup>4</sup> Stemlow, 112.

appearance.<sup>5</sup> "We had to entertain them with coffee and make chit chat and show that we could hold our bearing," recalls Master Gunnery Sergeant Carole Hawkins, who attended boot camp in 1973 and was issued an elaborate make-up kit prior to graduation.<sup>6</sup>

From 1949 through the 1970s, recruit training for women remain largely unchanged since women's roles in the Marine Corps continued to be limited. The trend of placing female Marines in administrative and clerical jobs persisted and of the twenty-two Military Occupational Specialties (MOS) available to women, none were considered to impose occupational or combat hazards, and less than 0.5% of women served in combat zones.<sup>7</sup> Further, women were not routinely assigned to the Fleet Marine Force, nor were they allowed to deploy or serve aboard ships. Thus, there was little incentive for the development of more rigorous or combat specific training requirements. Yet, as women saw more opportunities open to them in the 1980s due to rapidly changing societal roles and manpower shortages,

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<sup>5</sup> Stemlow, 112.

<sup>6</sup> Donna St.George, *For Female Recruits, the Struggle Begins Long Before the Battlefield*, 28 April 2002.

<<http://www.grose.us/bootdir/2sept.html>> (4 February 2005).

<sup>7</sup> R.J. O'Holleran, *General Military Subjects Training for Women Marines*, (Quantico, VA: Marine Corps Command and Staff College, 1970), 2.

they began to experience greater participation in the Corps' primary mission of war fighting.<sup>8</sup>

### **Women in Combat**

The unprecedented new career opportunities for women in the Marine Corps in the 1980s meant that women were increasingly placed in billets where they could face hostile action. Suddenly, women were allowed to deploy, serve on ships, and were assigned to combat zones, sometimes operating near front lines. Further, all occupational specialties were open to women except the four that were considered to be directly related to combat: artillery, armor, infantry, and flight crew. However, unlike before, women were actually assigned to each and every MOS available to them, and many of the new specialties involved significant occupational hazards.<sup>9</sup>

This radical integration of women more fully into the Marine Corps was never more evident than in January 1991 when more than 33,000 servicewomen deployed to Southwest Asia during Operations Desert Shield and Desert Storm. Desert Storm proved that servicewomen could not be kept

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<sup>8</sup> U.S. Marine Corps, *Women Marines in the 1980's*, (Washington D.C.: Division of Public Affairs, Headquarters, U.S. Marine Corps, 1986), 8.

<sup>9</sup> U.S. Marine Corps, *Women Marines in the 1980's*, 15-16.

safe simply by classifying some jobs as non-combat positions and assigning women to those jobs. Thirteen servicewomen were killed and two were prisoners-of-war.<sup>10</sup> As Army Sergeant Barbara Bates put it, "When the shells start coming downwind, I will be counting on my flak jacket for protection, not my [job title]." <sup>11</sup> Women's new role as "war fighters" meant that old training requirements were no longer appropriate or sufficient to set women up for success in their careers in the Corps.

From 1918 to the late 1960s, women Marines were not subject to a physical fitness evaluation. Fitness was expected to be maintained through voluntary activities, and women were not given time during the work day to conduct physical training. Eventually, in 1969 a PFT was established to include a shuttle run, bent knee push-ups, bent knee sit-ups, a jump and reach, and a 600 yard run/walk.<sup>12</sup> Yet with female Marines becoming more involved in the Marine Corps' primary mission of war fighting, the physical standards began to change in order to more properly condition women for the possibility of combat.

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<sup>10</sup> *Women in Military Service for America Memorial Foundation*, 28 April 2002, <<http://www.womensmemorial.org/historyandcollections/history/irnmre1990s.html>> (4 February 2005).

<sup>11</sup> *Women in Military Service for America Memorial Foundation*.

<sup>12</sup> Ann Jewett, *Physical Fitness Tests Standards for Women Marines*, (Camp Lejeune, NC: Naval Medical Field Research Laboratory, 1968), 1-5.



## **The Flexed-arm Hang VS The Pull-up**

There have been many modifications to the PFT for women since 1969 in accordance with women's changing roles in the Marine Corps. Today the PFT has evolved to include a three-mile run, abdominal crunches, and a flexed arm hang.<sup>13</sup> Yet, even though the PFT has evolved to more appropriately evaluate and develop physical conditioning in female Marines with regards to abdominal strength and cardiovascular endurance, the method for evaluating upper body strength remains inappropriate and inaccurate. In executing the flexed-arm hang on the PFT, women are required to keep a slight bend in the arm at the elbow while hanging on a bar for a minimum of fifteen seconds to pass. The chin does not have to be above the bar, and other Marines are allowed to assist female Marines in assuming the flexed-arm position, eliminating the need for women Marines to lift their own body weight on the bar.<sup>14</sup>

By simply hanging on the bar while executing the flexed-arm hang, women do not learn to move their bodies through resistance. A more appropriate method for conditioning Marines to handle their body weight is the training required to perform a pull-up. According to John Allstadt, physical trainer and athlete, "Pull-ups have long

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<sup>13</sup> MCPFTBCP, 3-4.

<sup>14</sup> MCPFTBCP, 3-4.

been a staple exercise in the training of a wide variety of strength athletes... done properly, chin-[ups] and pull-ups build tremendous strength... and power in virtually every muscle of the upper body. The lats, shoulders, biceps, forearms, and grip are all thoroughly taxed with a good set of pull-ups."<sup>15</sup>

Although the goal of the Marine Corps' Physical Conditioning Program is not merely to train for the PFT, by not formally evaluating women Marines in the performance of pull-ups, some leaders are led to believe that female Marines cannot reasonably be expected to lift their own body weight. Others simply feel uncomfortable holding females to a standard that is not enforced on the PFT. As a result, meaningful upper body training for female Marines is largely ignored during regular physical training sessions.

### **Faulty Assumptions**

The fact that pull-ups have not yet been added to the PFT for women is in part explained by the fact that in society, as in the Marine Corps, the perception of what women can perform physically has "been the center of faulty

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<sup>15</sup> John Allstadt, *The Application and Creation of Pullup Power*, <<http://www.powerathletesmag.com/archives/seven/pullups.htm>> (4 February 2005).

assumptions and sexism where females... are concerned. Social issues, and misunderstanding about female physical and medical limitations (or the presumption of limitations) [has] conspired to slow the development of female performance for many years."<sup>16</sup> For example, the marathon for women was only added to the Olympic schedule in 1984. It was previously thought that women could not withstand the rigors of running for 26.2 miles. And yet, the world record for female marathon runners is 2:21, compared to 2:06:50 for men.<sup>17</sup>

Further complicating matters is the fact that the perception that it is too hard or impossible for women to lift their own body weight most likely began at an early age. Many adolescent girls began performing the flexed-arm hang in grade school during physical education classes, while boys learned how to do pull-ups.<sup>18</sup> According to Stewart Smith, former Navy Seal and professional physical fitness trainer, "One of the worst things we ever developed

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<sup>16</sup> Stephen Seiler, *Gender Differences in Endurance Performance and Training*, <<http://home.hia.no/~stephens/gender.htm>> (27 November 2004).

<sup>17</sup> Seiler.

<sup>18</sup> Mike Foley, *Helping Kids Take Steps Toward Fitness*, 3 May 2004, <<http://greenvilleonline.com/news/2004/05/03/2004050330484.htm>> (4 February 2005).

in physical fitness classes [was] the 'girl pull-up' or flexed-arm hang. At and early age, we have been telling young girls that they cannot do regular pull-ups because they will never be as strong as boys." <sup>19</sup>

Like society, many Marines are misinformed when it comes to women's physical capabilities and limitations. When surveyed, many Marines answered that it is simply not reasonable to expect the average woman to perform pull-ups due to a lack of upper body strength. One female sergeant asserted that, "Women should not be required to perform pull-ups because... when you look at the majority of females, most do not have the upper body strength of a man unless they're GI Jane..." A male major stated that requiring females to perform pull-ups would put them at a disadvantage since "physiological differences make [pull-ups] a more difficult standard." A female Captain agreed that the expectation would be unfair, claiming that although she has known women were capable of doing pull-ups with training, "women's builds are not normally... conducive to upper body strength, therefore making [pull-ups] more difficult to achieve..."

Interestingly enough, it is an entirely accurate assumption that some women can't perform pull-ups due to a

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<sup>19</sup> Stewart Smith, *Tips to Improve your Pull-ups (or do them!)*, <<http://www.stewsmith.com/linkpages/pullups.htm>> (28 November 2004).

lack of upper body strength. Yet, contrary to what many believe, the absence of the required upper body strength is due to a lack of effective training and conditioning vice a lack of ability.

### **Defeating the Pull-Up Myth.**

When it comes to strength training, "The strongest woman will never be as strong as the strongest man."<sup>20</sup> Yet, the intent of training women Marines to perform pull-ups is not to make them as strong as men, nor is it to compete with male Marines. The desired purpose of replacing the flexed-arm hang with pull-ups is to make female Marines stronger and more capable in combat relative to their own size. In the words of Dr. George Colfer, who has a Ph.D. in kinesiology and health,

"The importance of relative strength, in regards to health-related fitness, lies not in how much you can 'lift,' but rather in how efficiently you can move the body weight you are carrying."<sup>21</sup>

Thus, while it is true that individuals with the largest muscle cross sections generate the greatest

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<sup>20</sup> Smith.

<sup>21</sup> George R Colfer, *Fit to fight, Fit for Life*, 17 January 2004. <[http://www.tradoc.army.mil/pao/Web\\_specials?H\\_and\\_PWB/013004.htm](http://www.tradoc.army.mil/pao/Web_specials?H_and_PWB/013004.htm)> (4 February 2005).

absolute force, when it comes to relative strength, "comparison of men and women for strength using a ratio score with lean body mass as the divisor considerably reduces, if not eliminates, the large absolute value strength difference between genders."<sup>22</sup>

For example, a male who weighs 95 kg can bench 114 kg, while a woman who weighs 60 kg can bench press 70 kg, or only 62% of what the man can lift. In absolute terms, the male is clearly stronger, but the strength divided by the body mass for each yields values of 1.2 and 1.17 respectively. Thus, the ratio score reduced the percentage of difference in bench press strength to only 2.5%.

Such findings strongly support the argument that few differences exist, if any, in the muscle quality of men and women. The observed gender differences in absolute muscle strength merely reflect differences in muscle quantity (cross sectional area).<sup>23</sup> Thus, since strength can be developed in females just as it can in males, and since the Marine Corps requires strength training for all Marines, there is no reason to advocate different training requirements for male and female Marines.

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<sup>22</sup> Bernadette Marriott and Judith Grumstrup-Scott, eds, *Body Composition and Physical Performance*, (Washington D.C.: National Academy Press, 1992), 505.

<sup>23</sup> Marriott, 505.

### **Different Requirements Lead to Resentment**

Since the Marine Corps began as an exclusively male organization, it is no surprise that there has been considerable controversy over women's integration and changing role in the Marine Corps. Compounding the controversy over women's expanding role in the Marines Corps are the differing physical fitness requirements for male and female Marines. Some Marines believe the standards should be identical, to include the maximum and minimum times to complete all events, while others maintain that the standards should not be changed at all.

Although Marines surveyed could not agree on what the appropriate physical requirements should consist of for female Marines, all Marines surveyed unanimously agreed that differing physical standards lead to resentment. While some Marines surveyed were themselves resentful of the differing standards, Marines that were not themselves dissatisfied with the current physical standards had observed resentment and dissention of others in their unit.

One male lance corporal stated that, "It's not right that a female can be weaker and not do any pull-ups and still get promoted faster than me just because she has a weaker [PFT] standard." A male captain stated that, "Male Marines see differing standards as women [being] allowed to

be in [poorer] physical condition... and [some] female Marines resent the fact that they are looked at as different and in some way [inferior] to their male counterparts."

Although the fact that different standards cause resentment is not in itself a reason to transition to a pull-up requirement for women Marines, the fact remains that similar requirements would foster mutual respect and bring Marines closer together. A male captain who was surveyed agrees, contending that, "A Marine is a Marine. Having the same requirements and going through the same training builds unit cohesion. Marines want to be challenged. We are all Marines, and there is one Marine Corps, there should be one standard." The Marine Corps' manual for physical fitness also stresses the importance of unit cohesion, stating that physical conditioning should be used to "... provide a medium for developing the individual Marine's self-confidence and desire to excel, thereby enhancing the unit's overall discipline, morale, and esprit de corps."<sup>24</sup>

### **Retention, Promotion, and Recruiting**

Lastly, although some Marines acknowledge that there is a practical need for women to be able to perform pull-



ups, they maintain that the change should never be implemented due to possible negative impacts on retention, promotion, and recruiting. Yet, the attitude that women currently in the Marine Corps would be forced out or fail to get promoted pre-supposes that women will fail to conform to the new standard. This negative attitude and misconception about women's physical abilities and willingness to develop upper body strength is precisely why many Marines think pull-ups are impossible for females in the first place. The challenge would be for the leaders to motivate, inform, train, and hold their Marines to the standards.

Further, the possibility of a shift to pull-ups having a negative impact on retention, promotion, and recruiting is in itself not a valid reason to expect less of female Marines. Female Marines are capable of developing their upper bodies, and the requirement for them to do so is relevant. Rather than ignore the requirement for women to strengthen their upper bodies because of the possibility of an unintended negative impact, more careful research and greater attention to detail should be invested to ensure successful implementation.

To ensure successful implementation of the new standard, and to mitigate the possibility of unintended

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<sup>24</sup> MCPFTBCP, 1-2.

negative effects, the transition to pull-ups should be a well thought-out and deliberate process conducted over time. Marines should be notified of the change well in advance, giving them an appropriate amount of time to prepare for the new requirement. Further, the quantity of pull-ups required for female Marines to pass or maximize the PFT does not necessarily have to mirror the quantity currently required for male Marines. With further research, and while in the initial stages of implementation, it might make more sense to require female Marines to perform fewer pull-ups than their male counterparts for a comparable score.

### **The Exceptional Female**

Although the combat exclusion clause remains firmly intact, with on-going operations in support of Operation Iraqi Freedom and given the uncertainty and fog of war, women Marines need to be physically ready for the possibility of hostile action. By not properly emphasizing or developing upper body strength in women Marines, the Marine Corps is doing them a disservice by not giving them every chance for survival. Additionally, "Marines who are not physically fit can be a detriment to the readiness and

combat efficiency of their unit.”<sup>25</sup> If women Marines were held to a higher standard, they would be better able defend themselves, protect their Marines, and assist a fellow Marine who might be wounded in combat. And despite prevailing thought that pull-ups are too challenging, impractical, or dangerous to implement, increasing numbers of female Marines prove every day they are capable of upper body strength by mounting the bar and cranking out pull-ups. Yet, some non-believers cling to their comfortable notions, maintaining that it is only the “exceptional” female Marine who can perform such a feat. Yet, such a female is exceptional only in attitude, not physical ability. She is exceptional because she challenged herself to overcome the belief that pull-ups were impossible and put forth the required effort to learn a new skill in the absence of a formal requirement. The “exceptional” female is proof that women Marines can, and will perform to the standards that are set for them.

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<sup>25</sup> MCPFTBCP, 1-2.

## Bibliography

Allstadt, John. *The Application and Creation of Pullup Power*.  
<<http://www.powerathletesmag.com/archives/seven/pullups.htm>>  
(4 February 2005).

Colfer, George R. *Fit to fight, Fit for Life*. 17 January 2004.  
<[http://www.tradoc.army.mil/pao/Web\\_specials?H\\_and\\_PWB/013004.htm](http://www.tradoc.army.mil/pao/Web_specials?H_and_PWB/013004.htm)> (4 February 2005).

Foley, Mike. *Helping Kids Take Steps Toward Fitness*. 3 May 2004.  
<<http://greenvilleonline.com/news/2004/05/03/2004050330484.htm>> (4 February 2005).

Haas, Jen. *Shattering the Pull-up and Chin-up Myth*. 1996.  
<<http://www.mwarrior.com/pullups.htm>> (28 November 2004).

Hoffman, Jay. *Physiological Aspects of Sports Training and Performance*. Champaign, IL: Human Kinetics, 2002.

Jewett, Ann. *Physical Fitness Tests Standards for Women Marines*. Camp Lejeune, NC: Naval Medical Field Research Laboratory, 1968.

Lubold, Gordon, Stephen. *Coed Combat: Marines Rely on Army Lioness to get Job Done*. 3 December 2004.  
<<http://www.armyocs.com/portal/modules.php?name=News&file=artilce&sid=2>>. (4 February 2004).

Marriott, Bernadette and Judith Grumstrup-Scott, eds. *Body Composition and Physical Performance*. Washington D.C.: National Academy Press, 1992.

McArdle, William, Frank Katch, and Victor Katch. *Exercise Physiology*. 5th ed. Baltimore, MD: Lippincott Williams and Wilkins, 2001.

O'Holleran, R.J. *General Military Subjects Training for Women Marines*. Quantico, VA: Marine Corps Command and Staff College, 1970.

Otott, George and Dean Markham. *The Marine Corps Exercise Book*. New York: G.P. Putnam's Sons, 1968.

Seiler, Stephen. *Gender Differences in Endurance Performance and Training*.

<<http://home.hia.no/~stephens/gender.htm>> (27 November 2004).

Smith, Stewart. *Tips to Improve your Pull-ups (or do them!)*. <<http://www.stewsmith.com/linkpages/pullups.htm>> (28 November 2004).

St. George, Donna. *For Female Recruits, the Struggle Begins Long Before the Battlefield*. 28 April 2002.  
<<http://www.grose.us/bootdir/2sept.html>> (4 February 2005).

Stremlow, Mary. *A History of the Women Marines 1946-1977*. Washington D.C.: History and Museums Division, Headquarters, U.S. Marine Corps, 1986.

U.S. Marine Corps. *Women Marines in the 1980's*. Washington D.C.: Division of Public Affairs, Headquarters, U.S. Marine Corps, 1986.

U.S. Marine Corps. *Marine Corps Physical Fitness Test and Body Composition Program Manual (Marine Corps Order P6100.12 W/CH 1)*. Washington D.C.: Headquarters Marine Corps, 2002.

*Women in Military Service for America Memorial Foundation*. 28 April 2002.  
<<http://www.womensmemorial.org/historyandcollections/history/irmrel1990s.html>> (4 February 2005).